
 W P E R E H
 (TM)

Release 2.1D John F. Collins, Biocomputing Research Unit.
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Msrch_pp protein - protein database search, using Smith-Waterman algorithm
 on: Wed Aug 20 09:51:23 1997; MasPar time 10.32 Seconds
 421.174 Million cell updates/sec
 Tabular output not generated.

Title: >US-08-469-637A-2
 Description: (22-401) from US08469637A.pep (2 of 2)
 Perfect Score: 2861
 Sequence: 1 ETFFPKYLYHDETSHQLLC.....QKLFEMIGNQVQSVKISCL 380

Scoring table:
 PAM 150
 Gap 11

Searched: 96640 seqs, 1143965 residues
 Post-processing: Minimum Match 0%
 Listing first 45 summaries

Database: a-geneseq27
 1:part1 2:part2 3:part3 4:part4 5:part5 6:part6 7:part7
 8:part8 9:part9 10:part10 11:part11 12:part12 13:part13
 14:part14 15:part15 16:part16 17:part17 18:part18
 19:part19 20:part20

Statistics: Mean 34.245; Variance 142.032; scale 0.241

Pred. No. is the number of results predicted by chance to have a
 score greater than or equal to the score of the result being printed,
 and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description	Pred. No.
1	2861	100.0	380	20	R99924 Mature osteoclastogen	1.20e-278
2	2861	100.0	401	20	R99825 Full length osteoclas	1.20e-278
3	2847	99.5	401	20	R99932 Mutated OCIF, OCIF-C2	3.39e-277
4	2847	99.5	401	20	R99931 Mutated OCIF, OCIF-C1	3.39e-277
5	2843	99.3	401	20	R99933 Mutated OCIF, OCIF-C2	8.80e-277
6	2840	99.3	399	20	R99942 Mutated OCIF, OCIF-CL	1.80e-276
7	2841	99.3	401	20	R99934 Mutated OCIF, OCIF-C2	1.42e-276
8	2833	99.0	401	20	R99835 Mutated OCIF, OCIF-C2	9.57e-276
9	2794	97.7	393	20	R99948 Mutated OCIF, OCIF-CD	1.05e-271
10	2539	88.7	360	20	R99936 Mutated OCIF, OCIF-CD	2.64e-245
11	2481	86.7	351	20	R99943 Mutated OCIF, OCIF-CC	2.64e-239
12	2231	78.0	321	20	R99949 Mutated OCIF, OCIF-CC	1.84e-213
13	2218	77.5	359	20	R99937 Mutated OCIF, OCIF-DC	4.06e-212
14	2119	74.1	360	20	R99938 Mutated OCIF, OCIF-DC	6.78e-202
15	2079	72.7	359	20	R99939 Mutated OCIF, OCIF-DC	9.12e-198
16	1921	67.1	327	20	R99941 Mutated OCIF, OCIF-DD	1.80e-181
17	1915	66.9	272	20	R99944 Mutated OCIF, OCIF-DD	7.49e-181
18	1559	54.5	326	20	R99940 Mutated OCIF, OCIF-CD	3.20e-144
19	1370	47.9	197	20	R99945 Mutated OCIF, OCIF-CD	7.76e-115
20	1305	45.6	187	20	R99950 Mutated OCIF, OCIF-CB	3.49e-118

21	988	34.5	143	20	R99946	Mutated OCIF, OCIF-CC	7.30e-86
22	928	32.4	154	20	R99928	Osteoclastogenesis in	8.90e-80
23	924	32.3	145	20	R99930	Osteoclastogenesis in	2.90e-79
24	695	24.3	106	20	R99947	Mutated OCIF, OCIF-CC	2.76e-56
25	502	17.5	84	20	R99951	Mutated OCIF, OCIF-CP	4.29e-17
26	405	14.2	183	15	R77421	Bampt delat53 nerve g	1.32e-27
27	405	14.2	461	2	R11001	40KD TNF inhibitor pr	1.32e-27
28	401	14.0	461	14	R72504	p75 Tumour Necrosis F	3.22e-27
29	398	13.9	461	2	R11141	Human TNF-R deduced f	6.28e-27
30	398	13.9	461	8	R42058	Fibroblast derived TN	6.28e-27
31	398	13.6	485	2	R24016	Fusion protein TNFRc	3.74e-26
32	390	13.6	518	10	R51003	Sequence of a recombi	6.28e-27
33	375	13.1	474	2	R11142	TNF-R deduced from mt	1.05e-24
34	366	12.8	461	10	R51002	Sequence of human tum	7.72e-24
35	323	11.3	392	2	R11605	Human 75KD TNF-bindin	1.00e-19
36	301	10.5	277	8	R38859	Cd40 protein.	1.22e-17
37	269	9.4	326	5	R27866	Myxoma virus T2 prote	1.23e-14
38	269	9.4	326	15	R85072	Shope fibroma virus T	8.42e-14
39	260	9.1	325	5	R85071	Rabbit fibroma virus	8.42e-14
40	260	9.1	325	5	R27865	Cowpox virus T2-equiv	3.94e-11
41	231	8.1	355	15	R87450	Rat Tumour Necrosis F	7.25e-09
42	206	7.2	461	2	R07450	Cowpox virus Pst I/C1	3.29e-06
43	176	6.2	186	12	R62555	Human Tumour Necrosis	3.29e-06
44	176	6.2	455	2	R07451	Lymphocyte activation	2.20e-06
45	178	6.2	595	7	R35478		

ALIGNMENTS

RESULT 1
 ID R99924 standard; Protein: 380 AA.
 AC R99924;
 DT 22-APR-1997 (first entry)
 DE Mature osteoclastogenesis inhibitory factor.
 KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
 KM osteoporosis;
 OS Homo sapiens;
 PN W09626217-A1.
 PD 29-AUG-1996.
 PF 20-FEB-1996; J00374.
 PR 20-FEB-1995; JP-054977.
 PR 21-JUL-1995; JP-207508.
 PA (SNOM) SNOW BRAND MILK PROD CO LTD.
 PI Goto M, Higashio K, Kodayashi F, Mochizuki S, Morinaga T;
 PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
 DR WPI: 96-402320/40.
 DR N-PSDB: T3685.
 PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
 PT for bone resorption control, esp. treatment of osteoporosis
 PS Claim 6; Page 62-64; 183pp; Japanese.
 CC This sequence represents the mature osteoclastogenesis inhibitory
 CC factor (OCIF) of the invention. The OCIF has a molecular weight by
 CC SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-
 CC reducing conditions. The protein is adsorbed onto cation-exchangers
 CC or heparin and its activity is lowered after 10 mins at 70 deg.C or
 CC 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is
 CC useful in the control of bone resorption and therefore in the
 CC treatment and prevention of disorders of bone resorption, e.g.
 CC osteoporosis.
 CC Sequence 380 AA:
 SQ
 Query Match 100.0%; Score 2861; DB 20; Length 380;
 Best Local Similarity 100.0%; Pred. No. 1.20e-278;
 Matches 380; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db	1	etffpkylhydeeshqllcdkcpkylykqhctakvkcacpdyhdydshtsdecl	60
Qy	22	ETFFPKYLYHDETSHQLLCDKCPGYLYLKQHCYAKWKVCAPCPDHYHDSWTSDECL	81
Db	61	YCSVYCKELGYVKQECRTHRVYCKEGRYLYLEFCLHNSCPGFGYVQAGSPENTV	120
Qy	82	YCSVYCKELGYVKQECRTHRVYCKEGRYLYLEFCLHNSCPGFGYVQAGSPENTV	141

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Db 121 ckrpdpqffnestsakpcrkhtncsvfgllltqkgnathdnicsgnsestqkcgldvcl 180
OY 142 CKRCPCPGFFFSNETSSKAPCKRHTNCVFGLLLTQKGNATHDNICSGNSESTQKCGIDVTL 201
Db 181 ceaeaffravptkfcfnwslvldnlpgrtkvnaesverikrqhssqegtfqllkikwqbn 240
OY 202 CEAEFFRAVPFTFRTNWLMSLVLDNLPGRTKVNAESVERIKRQHSSEQOTFQLKLKMKQN 261
Db 241 kqgdvlkklldgldlcensvqrhishanltfegrlslneslpqkkyvgaedlektlkackp 300
OY 262 KDQDIYKRTIIDDICENSQVRHIGHANLTFEQLRSIMESLPgkkyvgaedlektlkackp 321
Db 301 sdqllkllslwrkngdgtlkglmhalksktyhfpkvtqslkktirflhsftmkykly 360
OY 322 SDQILKLKLSLWRKNGDDOTLKGMLHALKSKTYHFPKVTQSLKKTIRFLHSFTMYKLY 381
Db 361 qklflemignqvqsvxklscl 380
OY 382 QKLFLEMIGNQVSVKISCL 401

---SULT
ID R99925 standard; Protein: 401 AA.
AC R99925:
DE 22-APR-1997 (first entry)
KW Full length osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.
OS Homo sapiens.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..401
FT /note= "Mature OCIF, Claim 6"
PN WO9626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996; JP-054977.
PR 20-FEB-1995; JP-207508.
PR 21-JUL-1995; JP-207508.
PA (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
DR WPI: 96-402320/40.
DR N-PSDB: T36685.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Disclosure: Page 64-66; 183pp; Japanese.
CC This sequence represents the full length osteoclastogenesis inhibitory
CC factor (OCIF) of the invention. The OCIF has a molecular weight by
CC SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-
CC reducing conditions. The protein is adsorbed onto cation-exchangers
CC or heparin and its activity is lowered after 10 mins at 70 deg.C or
CC 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is
CC useful in the control of bone resorption and therefore in the
CC treatment and prevention of disorders of bone resorption, e.g.
CC osteoporosis.
SQ Sequence 401 AA:

Query Match 100.0%; Score 2861; DB 20; Length 401;
Best Local Similarity 100.0%; Pred. No. 1,20e-278;
Matches 380; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 202 ceaeaffravptkfcfnwslvldnlpgrtkvnaesverikrqhssqegtfqllkikwqbn 261
OY 202 CEAEFFRAVPFTFRTNWLMSLVLDNLPGRTKVNAESVERIKRQHSSEQOTFQLKLKMKQN 261
Db 262 kqgdvlkklldgldlcensvqrhishanltfegrlslneslpqkkyvgaedlektlkackp 321
OY 262 KDQDIYKRTIIDDICENSQVRHIGHANLTFEQLRSIMESLPgkkyvgaedlektlkackp 321
Db 301 sdqllkllslwrkngdgtlkglmhalksktyhfpkvtqslkktirflhsftmkykly 381
OY 322 SDQILKLKLSLWRKNGDDOTLKGMLHALKSKTYHFPKVTQSLKKTIRFLHSFTMYKLY 381
Db 361 qklflemignqvqsvxklscl 401
OY 382 QKLFLEMIGNQVSVKISCL 401

RESULT 3
ID R99932 standard; Protein: 401 AA.
AC R99932:
DE 22-APR-1997 (first entry)
KW Mutated OCIF, OCIF-C20S.
KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.
OS Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..401
FT /note= "Mature OCIF-C20S"
FT Misc_difference 202
FT /label= C20S
PN WO9626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996; JP-054977.
PR 20-FEB-1995; JP-207508.
PR 21-JUL-1995; JP-207508.
PA (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
DR WPI: 96-402320/40.
DR N-PSDB: T33162.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Claim 32; Page 96-98; 183pp; Japanese.
CC This sequence represents a mutated version of the full length
CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This
CC sequence represents OCIF-C20S in which the 20th Cys residue in the
CC mature OCIF protein is substituted by Ser. The OCIF of the invention
CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
CC and 120 kD under non-reducing conditions. The protein is adsorbed onto
CC cation-exchangers or heparin and its activity is lowered after 10 mins
CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
CC deg.C. OCIF is useful in the control of bone resorption and therefore
CC in the treatment and prevention of disorders of bone resorption, e.g.
CC osteoporosis.
SQ Sequence 401 AA:

Query Match 99.5%; Score 2847; DB 20; Length 401;
Best Local Similarity 99.7%; Pred. No. 3,39e-277;
Matches 379; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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OY 142 CKRCPDGFSSNETSSKAPCRKHTNCSVFGLLTQKGNATHDNICSGNSESTOKCIDVTL 201
Db 202 seaaffrfaupbtkitfpmwlsylvdnlpqtkynaesverikrqhssgeqtfqllkxhqn 261
OY 202 CEAEFFRFAVPKFTFPMWLSVLDNLPQTKYNAESVERIKRQHSQEOTFOLLKMKHQN 261
Db 262 kdqgdvkkliiddidlcensvgrhghantfeglrslmeslpgkxvgaedlektlkackp 321
OY 262 KDQDlVKKIIDDIDLCENSVGRHGHANTFEOQLRSLMESLPGKXVGAEDIEKTIKACKP 321
Db 322 sdqllkllslwrkngdgtklgimhalhsktyhfpkvtvgsjkktriflhfstmvly 381
OY 322 SDQlLKLLSLWRKNGDDTLKGLMHALKHSTYHFPKTVQSLKKTIRFLHSTMTKLY 381
Db 382 qkllflemingvgsvkiscl 401
OY 382 OKLFLEMIGNOVQSVKISCL 401

JLT 4
R99931 standard: Protein: 401 AA.
AC R99931:
DE 22-APR-1997 (first entry)
DE Mutated OCIF, OCIF-C19S.
KW Osteoclastogenesis inhibitory factor: OCIF; heparin; bone resorption;
KM osteoporosis.
OS Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note- "Signal peptide"
FT /protein 22..401
FT /note- "Mature OCIF-C19S"
FT Misc_difference 195
FT /label- C19S
PN MO9626217-A1.
PF 29-AUG-1996:
PF 20-FEB-1996: J00374.
PR 20-FEB-1995: JP-054977.
PR 21-JUL-1995: JP-207508.
PA (SNOW ) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI: 96-402320/40.
DR N-PSDB: T33161.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PT Claim 29: Page 94-96: 183pp: Japanese.
PS This sequence represents a mutated version of the full length
PS osteoclastogenesis inhibitory factor (OCIF) of the invention. This
PS sequence represents OCIF-C19S in which the 19th Cys residue in the
PS mature OCIF protein is substituted by Ser. The OCIF of the invention
PS has a molecular weight by SDS-PAGE of 60 kD under reducing conditions.
PS and 120 kD under non-reducing conditions. The protein is adsorbed onto
PS cation-exchangers or heparin and its activity is lowered after 10 mins
PS at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
PS deg.C. OCIF is useful in the control of bone resorption and therefore
PS in the treatment and prevention of disorders of bone resorption, e.g.
PS osteoporosis.
SQ Sequence 401 AA:

Query Match 99.5%; Score 2847; DB 20; Length 401;
Best Local Similarity 99.7%; Pred. No. 3.39e-277;
Matches 379; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Db 22 etfppkylhydeetshqllcdkcpptgylkqhctakwktvcapcdpdytidswhstdecl 81
OY 22 ETFPPKYLHYDEETSHQLLCKDCPPGTGTLKQHCYAKWKTVCAPCPDHYTIDSWHTSDCL 81
Db 82 ycsprckelqygvkgecrtthrvceckegrylelefcjkhscppgfgvvgagperntv 141
OY 82 YCSPRCKELQYGVKGCRTTHRVCECKEGRYLELEFCJLHNSCPPGFGVVGAGPERNTV 141
Db 142 ckrcpdgffsnetsskacprkhtncsvfgljlltqkgnathdnicsgsnestqksgldvltl 201

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OY 142 CKRCPDGFSSNETSSKAPCRKHTNCSVFGLLTQKGNATHDNICSGNSESTOKCIDVTL 201
Db 202 seaaffrfaupbtkitfpmwlsylvdnlpqtkynaesverikrqhssgeqtfqllkxhqn 261
OY 202 CEAEFFRFAVPKFTFPMWLSVLDNLPQTKYNAESVERIKRQHSQEOTFOLLKMKHQN 261
Db 262 kdqgdvkkliiddidlcensvgrhghantfeglrslmeslpgkxvgaedlektlkackp 321
OY 262 KDQDlVKKIIDDIDLCENSVGRHGHANTFEOQLRSLMESLPGKXVGAEDIEKTIKACKP 321
Db 322 sdqllkllslwrkngdgtklgimhalhsktyhfpkvtvgsjkktriflhfstmvly 381
OY 322 SDQlLKLLSLWRKNGDDTLKGLMHALKHSTYHFPKTVQSLKKTIRFLHSTMTKLY 381
Db 382 qkllflemingvgsvkiscl 401
OY 382 OKLFLEMIGNOVQSVKISCL 401

RESULT 5
ID R99931 standard: Protein: 401 AA.
AC R99931:
DE 22-APR-1997 (first entry)
DE Mutated OCIF, OCIF-C21S.
KW Osteoclastogenesis inhibitory factor: OCIF; heparin; bone resorption;
KM osteoporosis.
OS Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note- "Signal peptide"
FT /protein 22..401
FT /note- "Mature OCIF-C21S"
FT Misc_difference 277
FT /label- C21S
PN MO9626217-A1.
PF 29-AUG-1996:
PF 20-FEB-1996: J00374.
PR 20-FEB-1995: JP-054977.
PR 21-JUL-1995: JP-207508.
PA (SNOW ) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI: 96-402320/40.
DR N-PSDB: T33163.
PT DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PT Claim 35: Page 98-100: 183pp: Japanese.
PS This sequence represents a mutated version of the full length
PS osteoclastogenesis inhibitory factor (OCIF) of the invention. This
PS sequence represents OCIF-C21S in which the 21st Cys residue in the
PS mature OCIF protein is substituted by Ser. The OCIF of the invention
PS has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
PS and 120 kD under non-reducing conditions. The protein is adsorbed onto
PS cation-exchangers or heparin and its activity is lowered after 10 mins
PS at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
PS deg.C. OCIF is useful in the control of bone resorption and therefore
PS in the treatment and prevention of disorders of bone resorption, e.g.
PS osteoporosis.
SQ Sequence 401 AA:

Query Match 99.4%; Score 2843; DB 20; Length 401;
Best Local Similarity 99.2%; Pred. No. 8.80e-277;
Matches 377; Conservative 2; Mismatches 1; Indels 0; Gaps 0;
Db 22 etfppkylhydeetshqllcdkcpptgylkqhctakwktvcapcdpdytidswhstdecl 81
OY 22 ETFPPKYLHYDEETSHQLLCKDCPPGTGTLKQHCYAKWKTVCAPCPDHYTIDSWHTSDCL 81
Db 82 ycsprckelqygvkgecrtthrvceckegrylelefcjkhscppgfgvvgagperntv 141
OY 82 YCSPRCKELQYGVKGCRTTHRVCECKEGRYLELEFCJLHNSCPPGFGVVGAGPERNTV 141

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Db      142  ckrpcpgffsnetskpcrkhtncsvfgllltqkgnathdnicsgnseetqcgldvlt 201
      |||
Oy      142  CRKCPDGFSSNETSKAPCRKHTNCSVFGLLLTQKGNATHDNICSGNSESTQCGLDVLT 201
Db      202  cceaffrfavpkkfcpnwjlvvdnlpgtkvnaesverikrghsqeqtfqllkklwkhqn 261
      |||
Oy      202  CEBAFFRFVAPKFTFPMNLVLDNLPGTKVNAESVERIKRQHSSEQGTQGLKLMKHQN 261
Db      262  kqgdlyvkkllqddldcensvqrhlgnahtfeglrslmeslpqkxvgaediektackp 321
      |||
Oy      262  KQODIVKKLIQDDIDLCENSVQRHIGHANLTFEOLRSLMESLPQKXVGAEDIKTIKACP 321
Db      322  sdqllkllslwrkngddtlkglmhalkhsctyfpkvtgslkktirfthftmwykly 381
      |||
Oy      322  SDQILKLLSLWRKNGDDTLKGLMHALKHSCTYFPKVTOSLKKTI RFLHSFTMYKLY 381
Db      382  qklflemingvqsvkisl 401
      |||
Oy      382  QKLFLEMIGNOVQSVKISCL 401

      .JLT 6
ID      R99942 standard; Protein: 399 AA.
AC      R99942;
DT      23-APR-1997 (first entry)
DE      Mutated OCIF, OCIF-CL.
KW      Osteoclastogenesis Inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
OS      Synthetic.
FH      Key
FT      Peptide 1..21 Location/Qualifiers
FT      /note- "Signal peptide"
FT      Protein 22..399
FT      /note- "Mature OCIF-CL"
      WO9626217-A1.
PN      29-AUG-1996.
PF      20-FEB-1996; J00374.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
      WPI: 96-402320/40.
DR      N-PSDB: T33172.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 62; Page 117-119; 183pp; Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-CL in which amino acids 379-380 of the
      mature OCIF protein are deleted. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
CC      Sequence 399 AA:
SO
Query Match 99.3%; Score 2840; DB 20; Length 399;
Best Local Similarity 100.0%; Pred. NO.1.80e-276;
Matches 378; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Db      22  etfppkylhydeetsqhlldckcpptgylkqhctakwktvcapcpdhytldswhtsdecl 81
      |||
Oy      22  ETRFPKYLHYDETSQHLCDKCPPTGLKQHCTAKWKTVCAPCPDHYTSDWHTSDECL 81
Db      82  ycsprvckelgyvkxgecnrthnrvcckegryllefclkhscppgfyvvgagtpervtv 141
      |||
Oy      82  YCSPVCKELQYVKXGEENRTHNRVCKEGRYLEIEFCLKHSRCPGFGVVOAGTPERTV 141
Db      142  ckrpcpgffsnetskpcrkhtncsvfgllltqkgnathdnicsgnseetqcgldvlt 201

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Oy      142  ckrpcpgffsnetskpcrkhtncsvfgllltqkgnathdnicsgnseetqcgldvlt 201
      |||
Db      202  cceaffrfavpkkfcpnwjlvvdnlpgtkvnaesverikrghsqeqtfqllkklwkhqn 261
      |||
Oy      202  CEBAFFRFVAPKFTFPMNLVLDNLPGTKVNAESVERIKRQHSSEQGTQGLKLMKHQN 261
Db      262  kqgdlyvkkllqddldcensvqrhlgnahtfeglrslmeslpqkxvgaediektackp 321
      |||
Oy      262  KQODIVKKLIQDDIDLCENSVQRHIGHANLTFEOLRSLMESLPQKXVGAEDIKTIKACP 321
Db      322  sdqllkllslwrkngddtlkglmhalkhsctyfpkvtgslkktirfthftmwykly 381
      |||
Oy      322  SDQILKLLSLWRKNGDDTLKGLMHALKHSCTYFPKVTOSLKKTI RFLHSFTMYKLY 381
Db      382  qklflemingvqsvkisl 399
      |||
Oy      382  QKLFLEMIGNOVQSVKIS 399

RESULT 7
ID      R99934 standard; Protein: 401 AA.
AC      R99934;
DT      22-APR-1997 (first entry)
DE      Mutated OCIF, OCIF-C22S.
KW      Osteoclastogenesis Inhibitory factor; OCIF; heparin; bone resorption;
      osteoporosis.
OS      Synthetic.
FH      Key
FT      Peptide 1..21 Location/Qualifiers
FT      /note- "Signal peptide"
FT      Protein 22..401
FT      /note- "Mature OCIF-C22S"
      MISC_difference 277
FT      /label- C22S
      WO9626217-A1.
PN      29-AUG-1996.
PF      20-FEB-1996; J00374.
PR      20-FEB-1995; JP-054977.
PR      21-JUL-1995; JP-207508.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
      Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
      WPI: 96-402320/40.
DR      N-PSDB: T33164.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 38; Page 100-102; 183pp; Japanese.
CC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-C22S in which the 22nd Cys residue in the
      mature OCIF protein is substituted by ser. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
CC      Sequence 401 AA:
SO
Query Match 99.3%; Score 2841; DB 20; Length 401;
Best Local Similarity 99.5%; Pred. NO.1.42e-276;
Matches 378; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db      22  etfppkylhydeetsqhlldckcpptgylkqhctakwktvcapcpdhytldswhtsdecl 81
      |||
Oy      22  ETRFPKYLHYDETSQHLCDKCPPTGLKQHCTAKWKTVCAPCPDHYTSDWHTSDECL 81
Db      82  ycsprvckelgyvkxgecnrthnrvcckegryllefclkhscppgfyvvgagtpervtv 141
      |||
Oy      82  YCSPVCKELQYVKXGEENRTHNRVCKEGRYLEIEFCLKHSRCPGFGVVOAGTPERTV 141

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Db	142	ckrpbdfifsnetskarpckhktncsfqjlllcbqknatdnlncsgnasetqkcgjdvlt	201
Qy	142	ckrpbdfifsnetskarpckhktncsfqjlllcbqknatdnlncsgnasetqkcgjdvlt	201
Db	202	ceeaaffiravptkftupmlsvlvonlprtkvnaesverikrqhsqeqtfqjllk\w\hqn	261
Qy	202	ceeaaffiravptkftupmlsvlvonlprtkvnaesverikrqhsqeqtfqjllk\w\hqn	261
Db	262	kddqdvkklldlclcnsvqgrhghnllcfegqirsimeslprjtkygaedlctktkaskp	321
Qy	262	kddqdvkklldlclcnsvqgrhghnllcfegqirsimeslprjtkygaedlctktkaskp	321
Db	322	sdqjllnslswrlkngqgdclqjlmhalhnsktyhfpktvqslkclrlzfnhsfcm\k\ly	381
Qy	322	sdqjllnslswrlkngqgdclqjlmhalhnsktyhfpktvqslkclrlzfnhsfcm\k\ly	381
Db	382	qklflemlgnqvgvsktscl	401
Qy	382	qklflemlgnqvgvsktscl	401

Accession	Source	Organism	Protein	Length	Weight	PI	Ref
U00001	GenBank	Human	OCIF	22	2200	4.0	1
U00002	GenBank	Human	OCIF	22	2200	4.0	2
U00003	GenBank	Human	OCIF	22	2200	4.0	3
U00004	GenBank	Human	OCIF	22	2200	4.0	4
U00005	GenBank	Human	OCIF	22	2200	4.0	5
U00006	GenBank	Human	OCIF	22	2200	4.0	6
U00007	GenBank	Human	OCIF	22	2200	4.0	7
U00008	GenBank	Human	OCIF	22	2200	4.0	8
U00009	GenBank	Human	OCIF	22	2200	4.0	9
U00010	GenBank	Human	OCIF	22	2200	4.0	10
U00011	GenBank	Human	OCIF	22	2200	4.0	11
U00012	GenBank	Human	OCIF	22	2200	4.0	12
U00013	GenBank	Human	OCIF	22	2200	4.0	13
U00014	GenBank	Human	OCIF	22	2200	4.0	14
U00015	GenBank	Human	OCIF	22	2200	4.0	15
U00016	GenBank	Human	OCIF	22	2200	4.0	16
U00017	GenBank	Human	OCIF	22	2200	4.0	17
U00018	GenBank	Human	OCIF	22	2200	4.0	18
U00019	GenBank	Human	OCIF	22	2200	4.0	19
U00020	GenBank	Human	OCIF	22	2200	4.0	20
U00021	GenBank	Human	OCIF	22	2200	4.0	21
U00022	GenBank	Human	OCIF	22	2200	4.0	22
U00023	GenBank	Human	OCIF	22	2200	4.0	23
U00024	GenBank	Human	OCIF	22	2200	4.0	24
U00025	GenBank	Human	OCIF	22	2200	4.0	25
U00026	GenBank	Human	OCIF	22	2200	4.0	26
U00027	GenBank	Human	OCIF	22	2200	4.0	27
U00028	GenBank	Human	OCIF	22	2200	4.0	28
U00029	GenBank	Human	OCIF	22	2200	4.0	29
U00030	GenBank	Human	OCIF	22	2200	4.0	30
U00031	GenBank	Human	OCIF	22	2200	4.0	31
U00032	GenBank	Human	OCIF	22	2200	4.0	32
U00033	GenBank	Human	OCIF	22	2200	4.0	33
U00034	GenBank	Human	OCIF	22	2200	4.0	34
U00035	GenBank	Human	OCIF	22	2200	4.0	35
U00036	GenBank	Human	OCIF	22	2200	4.0	36
U00037	GenBank	Human	OCIF	22	2200	4.0	37
U00038	GenBank	Human	OCIF	22	2200	4.0	38
U00039	GenBank	Human	OCIF	22	2200	4.0	39
U00040	GenBank	Human	OCIF	22	2200	4.0	40
U00041	GenBank	Human	OCIF	22	2200	4.0	41
U00042	GenBank	Human	OCIF	22	2200	4.0	42
U00043	GenBank	Human	OCIF	22	2200	4.0	43
U00044	GenBank	Human	OCIF	22	2200	4.0	44
U00045	GenBank	Human	OCIF	22	2200	4.0	45
U00046	GenBank	Human	OCIF	22	2200	4.0	46
U00047	GenBank	Human	OCIF	22	2200	4.0	47
U00048	GenBank	Human	OCIF	22	2200	4.0	48
U00049	GenBank	Human	OCIF	22	2200	4.0	49
U00050	GenBank	Human	OCIF	22	2200	4.0	50
U00051	GenBank	Human	OCIF	22	2200	4.0	51
U00052	GenBank	Human	OCIF	22	2200	4.0	52
U00053	GenBank						

Query Match	99.0%;	Score 2833;	DB 20;	Length 401;
Best Local Similarity	99.5%;	Pred. No. 9.57e-276;		
Matches	378;	Conservative	0;	Mismatches 2;
			Indels	0;
			Gaps	0;

Db 22 etlppkxlyhnydecsnqldckcppygylkqhcxakxwtvcaapqpdhytsswhstgsel 81

Oy 22 EtfppkxlyhnydeetsHQLLOCDKCPGGTILKQKCHTAKMKTVAPCDDHRTIDSMHSDCL 81

Db 82 ycsprckelgyvkgcncrlnhrvceckegryltelefclkhrcppgfigvvaagipervt 144

Oy 82 YCSprckelgyvkgcncrlnhrvceckegryltelefclkhrcppgfigvvaagipervt 144

D	142	ckrpbpoffsmetsckaprcckhctncsvfglllqckgnatndlncsgnseetqrcgldvtl	200
Q	142	ckrpbpoffsmetsckaprcckhctncsvfglllqckgnatndlncsgnseetqrcgldvtl	201
D	202	ceaaaffafaybckltpmwlsvldnlpqtkvnaesverikrqhsaqeqtfqllklykhn	261
Q	202	ceaaaffafaybckltpmwlsvldnlpqtkvnaesverikrqhsaqeqtfqllklykhn	261
D	262	kddgatkvlldldlclensvqtrhghnalcfeqgrsimeslprkkygaadlctkckp	321
Q	262	kddgatkvlldldlclensvqtrhghnalcfeqgrsimeslprkkygaadlctkckp	321
D	322	sdqllklllswrlkngqcdtkqlmhaiknsktyhfpdkvtqslkcklrlfshfcmkly	381
Q	322	sdqllklllswrlkngqcdtkqlmhaiknsktyhfpdkvtqslkcklrlfshfcmkly	381
D	382	qklftlemingvqsklssl	401
Q	382	qklftlemingvqsklssl	401

ID	RESULT	9
AC	R99948: standard: Protein: 393 AA.	
DT	23-APR-1997 (first entry)	
DE	Mutated OCIF, OCIF-Cbst.	
KW	Osteoclastogenesis inhibitory factor: OCIF; heparin: bone resorption; osteoporosis.	
OS	Synthetic.	
FH	Key	location/Qualifiers
FT	Peptide	1..21
FT	/note="Signal peptide"	
FT	Protein	22..393
FT	/note="Mature OCIF-Cbst"	
FT	Misc.difference	392
FT	/label= Gln371Ileu	
PN	W09626217-A1.	
PD	29-AUG-1986.	
PF	20-FEB-1986; J00374.	
PR	20-FEB-1995; JP-054977.	
PR	21-JUL-1995; JP-207508.	
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;	
PI	Nakagawa N, Shima K, Tsuda E, Ueda M, Yano K, Yasuda H;	
DR	WP: 96-402370/40.	
DR	N-PSDB: T33178.	
PT	DNA encoding Osteoclastogenesis inhibitory factor protein - useful	
PT	for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 80: Page 126-128; 183pp; Japanese.	
CC	This sequence represents a mutated version of the full length	
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This	
CC	sequence represents OCIF-Cbst in which Gln 371 is substituted by	
CC	Leu and amino acids 373-380 of the mature OCIF protein are deleted.	
CC	These changes are caused by the introduction of a restriction site in	
CC	the DNA encoding this protein. The OCIF of the invention has a	
CC	molecular weight by SDS-PAGE of 60 kD under reducing conditions	
CC	and 120 kD under non-reducing conditions. The protein is adsorbed onto	
CC	cation-exchangers or heparin and its activity is lowered after 10 mins	
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90	
CC	deg.C. OCIF is useful in the control of bone resorption and therefore	
CC	in the treatment and prevention of disorders of bone resorption, e.g.	
CC	osteoporosis.	
SC	Sequence 393 AA;	

Query Match	97.78;	Score 2794;	DB 20;	Length 393;
Best Local Similarity	99.78;	Pred. No. 1.05e-271;		
Matches 371; Conservative	0;	Mismatches 1;	Indels 0;	Gaps 0

Db 22 etfppkyllhydeetsnqlldckcprpgcyllqhtctakkwrtvcaprcpohyfrdswhstdecl 81
|||||
QY 22 ETfPPKYLHNDDEETSHQLCDKCPRGTYLLQHCTAKKWKVCAPRCPDHYFRDSWHTSDECL 81

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Db      82  ycsprvckelgyvkgecntrhnrvceckegrylelefcikhrscppgfgvvagatpervntv 141
      |||||||
Qy      82  YCSPVCKELOLYVQECNRTNRRKCECKEGRYLEIEFCLKRRSCPPGFGVQACTPERNTV 141
      |||||||
Db      142  ckrpcpdgffsnetsskacprckhncsvfglllqkgnathdnicsnsestqcgldvlt 201
      |||||||
Qy      142  CKRCPDGFNFENETSSKAPCRKHNCVFGLLLTQKGNATHDNCSCNSESTQCGLDVLT 201
      |||||||
Db      202  ceaafrfayvptkfrpnwlsylvdnlpjgkvaesverikrghssgeqtqllkvlkhn 261
      |||||||
Qy      202  CEAAFRFAVPTKFTPNWLSVLDNLPJGTVAESVERIKRQHSOEGFTQLKWKHON 261
      |||||||
Db      262  kdgdlkklkllgdldleensvgrhghnanltfeglsimeslpjgkvgaeilektkacp 321
      |||||||
Qy      262  KDDDYVKKTIIDDLCENSVQRHGHANLTFEOLRSIMESLPKKGVAEDIEKTKACP 321
      |||||||
Db      322  scdqllkllslwrkngdqtllkglmalhsktyhfpkvtsglktlrlfhsftmykly 381
      |||||||
Qy      322  SDQILKLLSLWRKNGDQDTLKGMLHAKHSKYHFPKVTOSLKTIRFLHSEFTMYKLY 381
      |||||||
      382  qkllflemignlv 393
      |||||||
Qy      382  OKLFLEMIGNOV 393

RESULT 10
ID      R99936 standard; Protein: 360 AA.
AC      R99936;
DE      23-APR-1997 (first entry)
KW      Mutated OCIF, OCIF-DCR1.
OS      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      Osteoporosis.
FH      Key Location/Qualifiers
FT      peptide 1..21
FT      /note= "Signal peptide"
FT      Protein 22..360
FT      /note= "Mature OCIF-DCR1"
FT      MISC_difference 22..23
FT      /note= "Position of deletion, delta 2-42"
PD      WO9626217-A1.
PE      29-AUG-1996; J00374.
PR      20-FEB-1995; JP-054977.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M., Higashio K., Kobayashi F., Mochizuki S., Morinaga T.,
      Nakagawa N., Shima N., Tsuda E., Ueda M., Yano K., Yasuda H.;
      WPI: 96-402320/40.
N-PSDB: T33166.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 44; Page 105-107; 183pp; Japanese.
SC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-DCR1 in which amino acids 2-42 of the
      mature OCIF protein are deleted. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
SQ      Sequence 360 AA:

Query Match      88.7%; Score 2539; DB 20; Length 360;
Best Local Similarity 98.3%; Pred. No. 2,64e-245;
Matches 341; Conservative 1; Mismatches 4; Indels 1; Gaps 1;
      15 slkwtq-epcpdhyytdshstdeclysprvckelgyvkgecntrhnrvceckegryle 73
      : ||| |||||||
      55 TAKMKTVCAPCBDHYTDSMHTSDECLYCSPVCKELOLYVQECNRTNRRKCECKEGRYLE 114

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Db      74  iefclkhscppgfgvvagatpervntvckrcpdgffsnetsskacprckhncsvfgllt 133
      |||||||
Qy      115  IEFCLKHSRCPGFGVQACTPERNTVCKRCPDGFNFENETSSKAPCRKHNCVFGLLLT 174
      |||||||
Db      134  qkgnathdnicsnsestqcgldvltceaafrfayvptkfrpnwlsylvdnlpjgkva 193
      |||||||
Qy      175  QKGNATHDNCSCNSESTQCGIDVLTCEAAFRFAVPTKFTPNWLSVLDNLPJGTKYNA 234
      |||||||
Db      194  esverikrghssgeqtqllkvlkhnkxgdvkkllgdldleensvgrhghnanltfeg 253
      |||||||
Qy      235  ESVERIKRQHSOEGFTQLKWKHONKQNDQIVKTIIDDLCENSVQRHGHANLTFEQ 294
      |||||||
Db      254  lrslneslpjgkvgaeilektkacpsdqllkllslwrkngdqtllkglmalhskt 313
      |||||||
Qy      295  LRSLNESLPKKGVAEDIEKTKACPSDQILKLLSLWRKNGDQDTLKGMLHAKHSKT 354
      |||||||
Db      314  yfpkvtsglktlrlfhsftmyklykllflemignvqsvklscl 360
      |||||||
Qy      355  YHFPKVTOSLKTIRFLHSEFTMYKLYKLLFLEMIGNOVSVKISCL 401

RESULT 11
ID      R99943 standard; Protein: 351 AA.
AC      R99943;
DE      23-APR-1997 (first entry)
KW      Mutated OCIF, OCIF-CC.
OS      Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
      Osteoporosis.
FH      Key Location/Qualifiers
FT      peptide 1..21
FT      /note= "Signal peptide"
FT      Protein 22..351
FT      /note= "Mature OCIF-CC"
PD      WO9626217-A1.
PE      29-AUG-1996; J00374.
PR      20-FEB-1995; JP-054977.
PA      (SNOW) SNOW BRAND MILK PROD CO LTD.
PI      Goto M., Higashio K., Kobayashi F., Mochizuki S., Morinaga T.,
      Nakagawa N., Shima N., Tsuda E., Ueda M., Yano K., Yasuda H.;
      WPI: 96-402320/40.
N-PSDB: T33173.
PT      DNA encoding osteoclastogenesis inhibitory factor protein - useful
      for bone resorption control, esp. treatment of osteoporosis
PS      Claim 65; Page 119-121; 183pp; Japanese.
SC      This sequence represents a mutated version of the full length
      osteoclastogenesis inhibitory factor (OCIF) of the invention. This
      sequence represents OCIF-CC in which amino acids 331-380 of the
      mature OCIF protein are deleted. The OCIF of the invention
      has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
      and 120 kD under non-reducing conditions. The protein is adsorbed onto
      cation-exchangers or heparin and its activity is lowered after 10 mins
      at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
      deg.C. OCIF is useful in the control of bone resorption and therefore
      in the treatment and prevention of disorders of bone resorption, e.g.
      osteoporosis.
SQ      Sequence 351 AA:

Query Match      86.7%; Score 2481; DB 20; Length 351;
Best Local Similarity 100.0%; Pred. No. 2,64e-239;
Matches 330; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
      22 etfpkylhygdeetsbqlldckcpptvylkqhtakvkwvcapcpdhyytdshstdecl 81
      : ||| |||||||
      22 ETFPKYLIHYDEETSHQLLCDKCPPTGYLKHQHTAKWKTVCAPCBDHYTDSMTSDECL 81
      : ||| |||||||
      82 ycsprvckelgyvkgecntrhnrvceckegrylelefcikhrscppgfgvvagatpervntv 141
      : ||| |||||||
      82 YCSPVCKELOLYVQECNRTNRRKCECKEGRYLEIEFCLKRRSCPPGFGVQACTPERNTV 141

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Db	142	ckrppdoffnesssckapcrkhhncsvfglllqkgnathdnicsnsestqcgldvcl	201
Db	142	ckrppdoffnesssckapcrkhhncsvfglllqkgnathdnicsnsestqcgldvcl <td>201</td>	201
Qy	142	CKRPDPDFFSNERSKAPCRKHNCVFGLLLQKGNATHDNCSSNSESSTQKCGIDVTL	201
Db	202	ceeffffavpvtcfpmlsvlvdnlipgckvnaesvvarlkrqnsqegcfqlllkwkhn	261
Qy	202	CEEAFFFEAFPTFTFRNMLSVLVNDLPGITVNAESVERIKRQSSSQEGQFOLLKMKHKN	261
Db	262	kddgdlykklidgidlcensvqrhignhantlfeqlzimeslpgkxvgaediekclackp	321
Qy	262	KDDIDYKRIQDIDLCENSVQRHIGNHANTLFEQLZIMESLPGKXVGAEDIKTIACKP	321
Db	322	sdqllkllslwrkngdgtlklmlhaik	351
Qy	322	SDQILKLLSLWRKNGDGTLLKMLHAIK	351
RESULT 12			
R99949 standard: Protein: 321 AA.			
R99949: 23-APR-1997 (first entry)			
Mutated OCIF, OCIF-CspH.			
Osteoclastogenesis inhibitory factor; OCIF; heparin: bone resorption;			
osteoporosis.			
KM Synthetic.			
FH Key			
OS Location/Qualifiers			
FT	Peptide	1..21	
FT	/note= "Signal peptide"		
FT	Protein	22..321	
FT	/note= "Mature OCIF-CspH"		
PN	MO9626217-AI.		
PD	29-FEB-1996.		
PF	20-FEB-1996: J00374.		
PR	20-FEB-1995: JP-054977.		
PR	21-JUL-1995: JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.		
PI	Goto M, Higashino K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima K, Tsuda E, Ueda M, Yano K, Yasuda H;		
DR	WPI: 96-402320/40.		
DR	N-PSDB: T73179.		
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
PT	for bone resorption control, esp. treatment of osteoporosis		
PS	Claim 83: Page 128-129: 183pp: Japanese.		
CC	This sequence represents a mutated version of the full length		
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This		
CC	sequence represents OCIF-CspH in which amino acids 298-380 of the mature		
CC	OCIF protein are replaced by Ser-Leu-Asp. These changes are caused by		
CC	the introduction of a restriction site in the DNA encoding this protein.		
CC	The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD		
CC	under reducing conditions and 120 kD under non-reducing conditions. The		
CC	protein is adsorbed onto cation-exchangers or heparin and its activity is		
CC	lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost		
CC	after 10 mins at 90 deg.C. OCIF is useful in the control of bone		
CC	resorption and therefore in the treatment and prevention of disorders		
CC	of bone resorption, e.g. osteoporosis.		
SO	Sequence 321 AA:		
Query Match 78.0%: Score 2231: DB 20: Length 321:			
Best Local Similarity 100.0%: Pred. No. 1.84e-213:			
Matches 297: Conservative 0: Mismatches 0: Indels 0: Gaps 0:			
Db	22	etfpkplyhdeeshbllcdkcpptgylqghatakwtvcapcpdhyydswhsdecl	81
Qy	22	ETFPKPLKHLDEESHSHOLLCDKCPPTGYLQGHATAKWTVCAPCPDHYTDSWHSTDECL	81
Db	82	ycsvpckelgyvkqecnrthnyrceckegrylelefcclhkrscppgfygvvaqtpernrv	141
Qy	82	YCSVCKELGYVKQECNRTNHRVCECKEGRYLELEFCLHKRSCPPGFGVVAQATPERNRTV	141
Db	142	ckrppdoffnesssckapcrkhhncsvfglllqkgnathdnicsnsestqcgldvcl	201
Qy	142	CKRPDPDFFSNERSKAPCRKHNCVFGLLLQKGNATHDNCSSNSESSTQKCGIDVTL	201

Dd	202	ceafatfrayptkftpmwlslyvnhjdgtknaesverikrqhsgscqctfqlklxwhqn	261
Oy	202	CEAAFFRAVPTKFTPMWLSVLVYVNEGTIKNAESVERIKRQHSOSOTFOLLKLAKHQN	261
Dd	262	kdgdtvkvlldidlcensvgrhghantfeqlrslmesipgkvyaadlcktlka	318
Oy	262	KDQIVTKIIDDIDLCENSVGRHGHNLFEOURLMESIPGKVYAADIETKTika	318
 RESULT 13 ID R99937 standard; Protein; 359 AA.			
AC	R99937;		
DT	23-APR-1997 (first entry)		
KM	Mutated OCIF-DCR.		
RW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;		
KW	osteoporosis.		
OS	Synthetic.		
FH	Key	Location/Qualifiers	
FT	peptide	1..21	
FT	/note="Signal peptide"		
FT	Protein	22..359	
FT	/note="Mature OCIF-DCR2"		
FT	Misc.difference	63..64	
FT	/note="Position of deletion, delta	43-84"	
FN	WO9626217-A1.		
PD	29-AUG-1996.		
PF	20-FEB-1996; J00374.		
PR	20-FEB-1995; JP-054977.		
PR	21-JUL-1995; JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD,		
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;		
DR	WPJ: 96-402320/40.		
DR	N-PSDB: T33167.		
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
PT	for bone resorption control, esp. treatment of osteoporosis		
PS	Claim 47; Page 107-109; 183pp; Japanese.		
CC	This sequence represents a mutated version of the full length		
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This		
CC	sequence represents OCIF-DCR2 in which amino acids 43-84 of the		
CC	mature OCIF protein are deleted. The OCIF of the invention		
CC	has a molecular weight by SDS-PAGE of 60 kD under reducing conditions		
CC	and 120 kD under non-reducing conditions. The protein is adsorbed onto		
CC	cation-exchangers or heparin and its activity is lowered after 10 mins		
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90		
CC	deg.C. OCIF is useful in the control of bone resorption and therefore		
CC	in the treatment and prevention of disorders of bone resorption, e.g.		
CC	osteoporosis.		
SC	Osteoporosis.		
SO	Sequence 359 AA;		
 Query Match 77.5%; Score 2218; DB 20; Length 359; Best Local Similarity 89.4%; Pred. No. 4.06e-212; Matches 312; Conservative 5; Mismatches 26; Indels 6; Gaps 6			
Dd	15	sikwtq-etfpkylyhyde-etshq-llcdk-grpfylykhqtakwtkaecsegry 70	
Oy	55	TAKMTVCARPDNH-YTDSNHTSDECLCSPVKELDYVAQECNRRTHNRPC-ECKSGRY 112	
Dd	71	lelefclhzscppgfgyvgaqrperntvtckrcpdgffsmetskapcrkhtnsvfgll 130	
Oy	113	LEIEFLCLHRSCPGFGFYVGAQTERRNVTKRCPCDFGSFNTSSKAPCRKHTNSVFGLL 172	
Dd	131	ltgynahdhilcgsnstckgcldvllceaftrfaprkfkfnmlysvdvndjgtyk 190	
Oy	173	LLOKNAAHNDVICSNSSTIOKCGIDVTLCBAEFRRAVPRTKTPMLSLVDVLPCTKV 232	
Dd	191	naesverikrhsgseqffglklxwhbnkgqdlvxkllggdidlcensvqrhlshantfc 250	
Oy	233	NAESVERIKRHSGSEOFQFOLLKLAKHQNKKODLVKTIIDDIDLCENSVQRHGNALTF 292	
Dd	251	eqrlsmeslgkvkvaadedlcktlackpsdqllklislvrlknngddctklgmhalxhs 310	
Oy	293	EQLRLMSLSLGKVKGADIEKITKACPSPQILKLLSLMKNGDDDTLGLMHALXHS 352	

Db 311 ktyhfpkvtcgsllkktirfshsfmkylnhklflemingvgsvklscl 359
 |||||
 QY 353 KTHFPKVTQSLKKTIRFLSHFTMYKLYOKLFLEMIGNOVSVKISCL 401

RESULT 14

ID R99938 standard; Protein: 360 AA.

AC R99938:

DT 23-APR-1997 (first entry)

DE Mutated OCIF, OCIF-DCR3.

KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;

OS Osteoporosis.

OS Synthetic.

FM Key Location/Qualifiers

FT Peptide 1..21

FT /note- "Signal peptide"

FT Protein 22..360

FT /note- "Mature OCIF-DCR3"

FT Misc_difference 105..106

FT /note- "Position of deletion, delta 85-122"

FT W09626217-A1.

PD 29-AUG-1996.

PF 20-FEB-1996; J00374.

PR 20-FEB-1995; JP-054977.

PR 21-JUL-1995; JP-207508.

PA (SNOW) SNOW BRAND MILK PROD CO LTD.

PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;

PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;

PI WPI: 96-402320/40.

DR N-PSDB: T33168.

DR DNA encoding osteoclastogenesis inhibitory factor protein - useful

PT for bone resorption control, esp. treatment of osteoporosis

PS Claim 50; Page 109-111; 183pp; Japanese.

CC This sequence represents a mutated version of the full length

CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This

CC sequence represents OCIF-DCR3 in which amino acids 85-122 of the

CC mature OCIF protein are deleted. The OCIF of the invention

CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions

CC and 120 kD under non-reducing conditions. The protein is adsorbed onto

CC cation-exchangers or heparin and its activity is lowered after 10 mins

CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90

CC deg.C. OCIF is useful in the control of bone resorption and therefore

CC in the treatment and prevention of disorders of bone resorption, e.g.

CC osteoporosis.

CC Sequence 360 AA:

Query Match 74.1%; Score 2119; DB 20; Length 360;
 st Local Similarity 89.9%; Pred. No. 6,78e-202;
 tches 339; Conservative 0; Mismatches 0; Indels 38; Gaps 1;

Db 22 etfppkylyhydeetsqhlldckppgtylkqhctakwktvcapcpdhytswhtsdecl 81
 |||||
 QY 22 ETFPPKYLHYDEETSHQLLDCKCPPGTYLKQHCSTAKWKTVCAPCPDHYTDSWHTSDECL 81
 |||||
 Db 82 ycsppvckelgyvkgcentthrvceckegrylelfcclkhrcscppgfvvovagtperrntv 105
 |||||
 QY 82 YCSPPVCKELQYVKGECNTHRVCECKEGRYLELFCCLKHRCSCPPGFGVVQVAGTPERRNTV 141
 |||||
 Db 106 --ccpdpffenesakapcrkhtncsvfglllqkgnathnicsgnsesetqcgldvltl 163
 |||||
 QY 142 CRKCPDGFPSNNTSSKAPCRKHTNCSVFGLLLQKGNATHNICSNSSESTQCGLDVLT 201
 |||||
 Db 164 ceeaffrfavpklfcfnwlsvldnlpqtkvnaesverlkrghsseqctfqllkxhqn 223
 |||||
 QY 202 CEEAFRFRAVPTKFTFNWLSVLVDNLPQTKVNAESVERIKRGHSSOEQTFOCLKMKHQN 261
 |||||
 Db 224 kqgdvkvkligldicnsvqrhishanltfegrlsmeslpqkkyvgaedlektlaskp 283
 |||||
 QY 262 KDQDVKIRIIOIDIDICNVSQRHIGHANLTFEQLRSLMESLPQKKGVAEDIEKTIKACP 321
 |||||
 Db 284 sdqilklslwrlkngdgdclkglmhalkhsctyhfprkvtcgsllkktirfshsfmkyly 343
 |||||

QY 322 SDQILKLSLWRLKNGDQDTLKGMLHALKHSCTYHFPKVTQSLKKTIRFLSHFTMYKLY 381
 |||||
 Db 344 qkllflemingvgsvkl 360
 |||||
 QY 382 QKLFLEMIGNOVSVKI 398

RESULT 15

ID R99939 standard; Protein: 359 AA.

AC R99939:

DT 23-APR-1997 (first entry)

DE Mutated OCIF, OCIF-DCR4.

KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;

OS Osteoporosis.

OS Synthetic.

FM Key Location/Qualifiers

FT Peptide 1..21

FT /note- "Signal peptide"

FT Protein 22..359

FT /note- "Mature OCIF-DCR4"

FT Misc_difference 143..144

FT /note- "Position of deletion, delta 123-164"

FT W09626217-A1.

PD 29-AUG-1996.

PF 20-FEB-1996; J00374.

PR 20-FEB-1995; JP-054977.

PR 21-JUL-1995; JP-207508.

PA (SNOW) SNOW BRAND MILK PROD CO LTD.

PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;

PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;

PI WPI: 96-402320/40.

DR N-PSDB: T33169.

DR DNA encoding osteoclastogenesis inhibitory factor protein - useful

PT for bone resorption control, esp. treatment of osteoporosis

PS Claim 53; Page 111-113; 183pp; Japanese.

CC This sequence represents a mutated version of the full length

CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This

CC sequence represents OCIF-DCR4 in which amino acids 123-164 of the

CC mature OCIF protein are deleted. The OCIF of the invention

CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions

CC and 120 kD under non-reducing conditions. The protein is adsorbed onto

CC cation-exchangers or heparin and its activity is lowered after 10 mins

CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90

CC deg.C. OCIF is useful in the control of bone resorption and therefore

CC in the treatment and prevention of disorders of bone resorption, e.g.

CC osteoporosis.

CC Sequence 359 AA:

Query Match 72.7%; Score 2079; DB 20; Length 359;
 Best Local Similarity 88.7%; Pred. No. 9.12e-198;
 Matches 337; Conservative 0; Mismatches 1; Indels 42; Gaps 1;

Db 22 etfppkylyhydeetsqhlldckppgtylkqhctakwktvcapcpdhytswhtsdecl 81
 |||||
 QY 22 ETFPPKYLHYDEETSHQLLDCKCPPGTYLKQHCSTAKWKTVCAPCPDHYTDSWHTSDECL 81
 |||||
 Db 82 ycsppvckelgyvkgcentthrvceckegrylelfcclkhscppgfvvovagtperrntv 141
 |||||
 QY 82 YCSPPVCKELQYVKGECNTHRVCECKEGRYLELFCCLKHSCPPGFGVVQVAGTPERRNTV 141
 |||||
 Db 142 ck-----sgnsesetqcgldvltl 159
 |||||
 QY 142 CRKCPDGFPSNNTSSKAPCRKHTNCSVFGLLLQKGNATHNICSNSSESTQCGLDVLT 201
 |||||
 Db 160 ceeaffrfavpklfcfnwlsvldnlpqtkvnaesverlkrghsseqctfqllkxhqn 219
 |||||
 QY 202 CEEAFRFRAVPTKFTFNWLSVLVDNLPQTKVNAESVERIKRGHSSOEQTFOCLKMKHQN 261
 |||||
 Db 220 kqgdvkvkligldicnsvqrhishanltfegrlsmeslpqkkyvgaedlektlaskp 279
 |||||
 QY 262 KDQDVKIRIIOIDIDICNVSQRHIGHANLTFEQLRSLMESLPQKKGVAEDIEKTIKACP 321
 |||||
 Db 280 sdqilklslwrlkngdgdclkglmhalkhsctyhfprkvtcgsllkktirfshsfmkyly 339
 |||||

QY 322 SDOITLKLSTLRIKNGDPTLKGIMHALKHSKTYHFPKVTQSLKKTIRFLHSFTWKLY 381
DB 340 QKlflemingvgsvkisc1 359
QY 382 QKLFLEMIGNOVOSVKISCL 401

Search completed: Wed Aug 20 09:52:27 1997
Job time : 64 secs.